

PPENDIX B

COPY OF LETTER OF COORDIANTION ADJACENT REGIONS 49, 50, AND 51.

- 2. NOTICE OF INTENT TO FILE AS SENT OUT OVER THE TCIC/NCIC COMPUTER NETWORK.**

January 2, 1992

Jeff Haislet - REGION 49
Brazos County 9-1-1 District
P.O. Box 2291
Bryan, Texas 77806-2291

John McDaniel - REGION 50
Midland County Sheriff Department
P.O. Box 11287
Midland, Texas 79702-8287

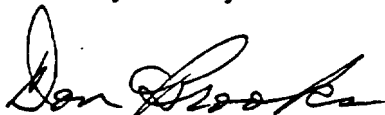
Mark Zeringue - REGION 51
Houston Police Department
Communications Maintenance Division
Room C413
61 Riesner Street
Houston, Texas 77002

Gentlemen:

Enclosed is a copy of Region 53's Plan. In accordance with the procedure established by the Federal Communications Commission we are requesting your review and concurrence.

We assigned spectrum via an APCO/CET packing plan in such a way as to minimize interference between our regions. We have taken into consideration your border assignments in determining our frequency plan.

As part of the Region 53 Plan, I would like to include letters from of the adjoining regions Chairmen indicating their concurrence with the Region 53 Plan. If I do not receive correspondence to the contrary by January 30, 1992, your concurrence will be assumed. Thank you for your attention in this matter.



Don Brooks
Region 53 Chairman
City of San Antonio
Communications Division
P.O. Box 839966
San Antonio, Texas 78283-3966
phone (512)299-7022

January 27, 1992

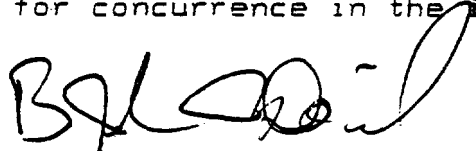
Don Brooks
Region 53 Chairman
City of San Antonio
Communications Division
P.O. Box 839966
San Antonio, Texas 78283-3966

Sir;

Reference is made to your recent letter to Regional Chairmen concerning review and concurrence of the Region 53 Plan.

This Region also opted to use the APCO/CET packing program and the guidelines suggested by APCO. This would indicate compatibility between the two Plans. Upon reviewing the Region 53 Plan, it does appear to be compatible with the pending Region 50 Plan and, therefore, I do concur with the Region 53 Plan.

I look forward to sending to you, a similar request for concurrence in the immediate future.



B. John McDaniel
Region 50 Chairman
Midland County Sheriff's Department
Communications Division
P.O. Box 11287
Midland, Texas 79702

alamo area council of governments

NOTICE OF PUBLIC MEETING

TO: All Persons Interested in Public Safety Communications

The Alamo Area Council of Governments will host a public meeting/hearing concerning Public Safety Radio Communications Plan for Region 53.

The Plan outlines activities in an effort to preserve the allocation of specific radio frequencies in the 800 MHz range for use by public safety agencies as set out in Federal Communication Commission (FCC) National Plan as found in FCC-359, the loading (capacity) of frequencies used, their coverage and the abandonment of unused frequencies in lower hands when implementing the 800 MHz use.

The meeting of the Regional Planning Committee will meet at 10:00 AM, Wednesday, January 15, 1992 at the AACOG Offices, 118 Broadway, Suite 400, San Antonio, Texas 78205. The committee solicits input in the development of the Plan before completing the plan.

All persons interested in future development of public safety communications is encouraged to attend.

PLEASE NOTIFY ANY PERSON(S) WHO MAY HAVE CONCERNS OR INPUT.

To: All Departments

From: Don Brooks, Region 53 Chairman

Subject: Communications Plan for Region 53

The Communications Plan for Region 53 will be presented for final acceptance January 15, 1992 at 10:00AM at the Alamo Area Council of Governments Offices located at 118 Broadway, ste. 400, San Antonio, Texas.

The Region 53 Communications Plan will be reviewed and submitted to the Planning Committee for approval. Upon the Planning Committee's acceptance, this plan will be submitted to the FCC.

All interested parties are encouraged to attend this meeting.

Don Brooks, Chairman
Region 53 Planning Committee

ADMINISTRATIVE MESSAGE FROM: SAPG TIME/DATE OF MESSAGE INPUT: 15:26 01/09/92.

PD SAN ANTONIO

ALL DEPARTMENTS

FROM DON BROOKS, REGION 53 CHAIRMAN

THE COMMUNICATIONS PLAN FOR REGION 53 WILL BE PRESENTED FOR FINAL ACCEPTANCE JANUARY 15, 1992 AT 10AM IN THE ALAMO AREA COUNCIL GOVERNMENTS OFFICES LOCATED AT 118 BROADWAY, STE 400, SAN ANTONIO, TEXAS.

THE REGION 53 COMMUNICATIONS PLAN WILL BE REVIEWED AND SUBMITTED TO THE PLANNING COMMITTEE FOR APPROVAL. UPON THE COMMITTEE'S ACCEPTANCE, THIS PLAN WILL BE SUBMITTED TO THE FCC. ALL INTERESTED PARTIES ARE ENCOURAGED TO ATTEND THIS MEETING.

PD SAN ANTONIO SH091525CDT

OUTPUT MSG 001, FROM SAPG

01/09/92 15:26

To: All Departments

From: Don Brooks, Region 53 Chairman

Subject: Communications Plan for Region 53

The Communications Plan for Region 53 will be presented for final acceptance January 15, 1992 at 10:00AM in the Alamo Area Council of Governments Offices located at 118 Broadway, ste. 400, San Antonio, Texas.

The Region 53 Communications Plan will be reviewed and submitted to the Planning Committee for approval. Upon the Planning Committee's acceptance, this plan will be submitted to the FCC.

All interested parties are encouraged to attend this meeting.

Don Brooks, Chairman
Region 53 Planning Committee

PPENDIX C.

EXPLANATION OF CIRCLEIZING A GEOGRAPHIC AREA

2. EXPLANATION OF THE FREQUENCY SORT PROGRAM
3. MEMORANDUM OF UNDERSTANDING BETWEEN THE FCC OF THE UNITED STATES AND THE SECRETARIA DE COMUNICANIONES Y TRANSPORTES OF THE UNITED MEXICAN STATES CONCERNING PRIVATE LAND MOBILE SERVICE USE OF THE BANDS 821-824 MHZ AND 866-869 MHZ ALONG THE COMMON BORDER.
 - (a). SHARING PRINCIPLES FOR THE USE OF THE FIVE PUBLIC SAFETY MUTUAL AID CHANNEL PAIRS ON BOTH SIDES OF THE COMMON BORDER.
4. TEXAS REGION 53 - MEXICAN BORDER MAP
5. LETTER FROM APCO TO REGION 53 CHAIRMAN, INDICATING THOSE COUNTIES IMPACTED BY THE MEMORANDUM OF UNDERSTANDING BETWEEN THE U.S. AND MEXICO

Circleizing the Geographic Area

In order to define the geographic area for frequency sort, the individual counties, sub-regions, and regions are defined with circles. The circles defining an area must all have the same radius and must not exceed the boundary of the area by more than three miles. The number of circles used to define an area does not have any bearing on the number of channels assigned. The circles used to define the area for the frequency sort program do not represent the location of actual sites within the area. The circleization of the geographic area is used only to define the individual areas within a Region for the frequency sort program.

THE FREQUENCY SORT PROGRAM

R. FLEISSNER

4/4/89

REVISED 4/11/89

Introduction

It must be understood that the Regional Plan must be frequency specific throughout the entire region. Note that it doesn't matter whether or not there are any known eligibles in a specific place at the time the plan is generated.

The task to be accomplished is to preassign specific radio frequencies to both known eligibles and geographic pools for future assignments in an efficient manner, as well as in a compatible manner from an interference standpoint.

It has been determined that a Region can be subdivided into sub-regions equal to or smaller than counties for the purpose of sorting frequencies.

It has also been determined that a ratio of one radio channel per 25,000 people is acceptable for public safety services communications needs. As a minimum, any county would require a minimum number of channels, say two channels. For example, a county with a projected population of 247,000 people would be eligible for 9.88 channels, which would be rounded up to 10 channels. A county of less than 50,000 would always get 2 channels.

If there were one or more known eligibles at the time of the plan within that county, their channel needs would be subtracted from the county pool of channels, leaving a lesser number of, or zero, channels available within the county for future assignment. For instance, if the example county had known eligibles who justified assignment of 6 channels, then the county pool would be reduced to four channels. On the

other hand, if known eligibles had justified need for 10 or more channels, then there would be zero channels in the county pool for future assignment.

Before beginning the process of preparing the information to be entered into the computer program for sorting the frequencies in a spectrum efficient manner, one needs to consider the following.

- 1) Remember that the task being done is a geographic sort of frequencies, NOT A SYSTEM DESIGN. Therefore, the coordinates and range data tabulated should describe the geography and not necessarily be actual user antenna sites.
- 2) Where there are known eligibles in a county, the known eligibles are to be considered first, to the exclusion, if necessary, of county pools for future assignment.
- 3) Where there are no known eligibles in a county, a county pool is to be established from which future assignments will be drawn.
- 4) The number of channels to be allocated to county pools should be related to the population of the county, with every county receiving a minimum number of frequencies.

Protection Ratios:

There are two protection ratios built into the computer program. One is for the co-channel case, and the other is for the adjacent channel case. The default ratios provide 35db Desired/Undesired signal ratio for co-channel assignments, and 15db Desired/Undesired ratio for the adjacent channel case. These ratios should provide a probability of interference of less than 1%. It is strongly suggested that these values be used. However, they are adjustable in the program on a global basis, but NOT on a per system basis.

Transmitter Combining:

The computer program is designed to provide a minimum frequency separation between any two channels assigned to the same eligible at the same site. This separation is provided in order to enable more efficient combining of multiple transmitters to a single antenna. These separated blocks of frequencies also have a maximum size. That is to say, if the eligible has more frequencies than the maximum size of the combining block, then a new compatible block is created.

Each of these parameters is adjustable in the program on a global basis. The default parameters are 0.25MHz minimum spacing and five channel blocks. These seem reasonable and are strongly recommended.

How to define Geography

For the purpose of this frequency sort, a geographic area is to be defined as one or more circles of equal radius. To the degree practical, this circle or circles should include the entire area of the eligible's geopolitical boundary, but not exceed the boundary by more than three miles. Note, that if more than one circle is used to define an area, all of these circles must be of equal radius. This is a restriction of the computer program. The largest circle radius acceptable is 25 miles.

So, the procedure is to gather maps of sufficient detail, outline the areas to be defined, determine the co-ordinates and radius of the circles which define each area, and tabulate the data. It is recommended that 2 degree maps be used for this purpose.

Special Considerations!

There are a number of existing licensees in the 806-821/851-866 MHz spectrum who plan to expand existing systems into the 821-824/866-869 MHz band. Existing radio units are unable to operate on 12.5KHz separated carrier frequencies. That is to say, the synthesizers can only generate frequencies every 25KHz. The result is that these radios can only operate on "even" FCC numbered channels in the 821-824/866-869 MHz band. The computer program is able to take this into account when making assignments. Therefore, the need to implement this restriction becomes a necessary part of the input data.

At the risk of confusing the reader, it must be pointed out that if the existing 806-821 MHz radios are operating on off-sets (as authorized in proximity to the Mexican border in Southern California), then the 821-824 MHz channels assigned must be "odd" FCC channel numbers.

Blocked Channels

In each region there will be at least the five national mutual aid channels which must be blocked out to prevent the computer from making assignments on those channels. In addition, large region-wide systems must be identified for the same reason. In this case, one must also consider whether or not the adjacent channels to these region wide assignments must also be blocked. Since the mutual aid channels are spaced at 0.5 MHz intervals, it is recommended that these region-wide systems also be spaced at 0.5 MHz and placed adjacent to the mutual aid channels. This procedure reduces the impact of blocked adjacent channels by virtue of the fact that the channel plan already has protection spacing on each side of the mutual aid channels.

Define The Environment

In your best judgement, is the county to be considered urban, suburban, open or quasi-open? Use the following indicators:

- 1 = Urban
- 2 = Suburban
- 3 = Quasi Open
- 4 = Open

1-Urban is a built-up city crowded with large buildings or closely interspersed with houses and thickly-grown trees. This would include the downtown area of a major city.

2-Suburban is a city or highway scattered with trees, houses and buildings. This would include the non-downtown area of a major city.

3-Quasi-open is an area between suburban and open areas. This includes areas outside of city limits that have few buildings and houses.

4-Open is an area where there are no obstacles such as tall trees or buildings in the propagation path or a plot of land which is cleared of anything for 300-400 meters ahead. This would include farm land, open fields, etc.

Number of Channels to be assigned

The number of channels to be assigned to each eligible, whether a known entity or a pool for future assignment, will be determined by other procedures in the Regional Plan. Therefore, it merely becomes a piece of input data in the assignment program.

Who is to receive channel assignments?

The eligibles who are to receive channels is a list determined by other procedures in the Regional Plan. Therefore, the list is just a list to be used as input to identify the eligibles.

What the Program Does

1. Input data for the Region (single site systems first)
 - Name (entity-county)
 - Co-ordinates
 - Range
 - Environment
 - Blocked/Protected Channels
 - Even/odd channel requirements
2. Select parameters
 - Combiner spacing
 - Maximum spectrum to be used
 - Number of iterations allowed
 - Protection Ratios for co-channel and adjacent channels
3. Computer determines an ERP/Ant. Height combination which places the 40dbu point at the range specified, in the environment specified for each system.
4. Computer calculates distances between all possible combinations of single site and multiple site systems.
5. The computer uses its input tables to determine compatible assignments such that the signal strength at a co-channel assignees boundary is $< + 5$ dbu, and the signal strength at an adjacent channel assignees boundary is $< + 25$ dbu.

6. If the maximum spectrum allowed is filled before all systems are assigned channels, then the list is re-ordered according to the difficulty of assignments, and another iteration is made.
7. If the maximum number of iterations is reached before all assignments are satisfied, the maximum spectrum allowed is increased and the process begins again. The maximum spectrum allowed is initially set at a value which will fail to find a solution. By incrementing its value on successive attempts, the first successful run should be the most spectrum efficient case this program will ever find.
8. In the event that the spectrum needed exceeds the FCC allocations, to get a solution the following adjustments can be made.
 - Number of assignments must be reduced
 - System ranges must be reduced
 - Protection ratios must be reduced
 - Number of iterations must be increased
 - Combinations of the above

Output Reports

- 1) Input Data For Assignment Program
 - Data Input from Region.
 - Adds ERP and Antenna Height determined by the computer
 - needs to be checked for accuracy
- 2) FCC Channel Assignments
 - Assignments ordered by channel number
 - This list will eventually go to the FCC
- 3) Sites and Assigned Channels
 - Ordered by Site (User)
 - FCC channels within site in numerical order
 - useful for checking combining assignments
 - useful for checking even/odd assignments
- 4) Detailed Assignment lists
 - a very useful tool for trouble shooting the computer output

Format for Transmitting Information to Computer

A standardized format for transmitting the necessary information to the computer program would look like this:

A list of pre-assigned region wide channels and channels reserved for protection must also be supplied.

ANNEX B

SHARING PRINCIPLES

This annex describes the sharing principles for the use of the five public safety mutual aid channel pairs on both sides of the common border.

1. The following channels will be used as public safety mutual aid channels:

<u>Mobile</u>	<u>Base</u>
821.0125 MHz calling	866.0125 MHz calling
821.5125 MHz	866.5125 MHz
822.0125 MHz	867.0125 MHz
822.5125 MHz	867.5125 MHz
823.0125 MHz	868.0125 MHz

2. All equipment capable of operating on the mutual aid channels must be equipped with the tone squelch of 156.7 Hz.
3. The channels shall be 25 kHz wide.
4. Within 110 kilometers of the common border, neither Party shall assign frequencies closer than 25 kHz to any of the mutual aid channels.
5. The mutual aid channels are available on a shared basis to duly authorized public safety agencies on both sides of the border. Users must first monitor the frequency before transmitting to ensure that any on-going emergency communications are not interrupted.

6. The mutual aid channels are to be used only for coordination of tactical communications between different public safety agencies, or for other similar emergency situations. They must not be used for administrative or other routine communications.

7. When the Parties designate regions along the border, they will designate and exchange local points of contact in the corresponding regions to facilitate the coordination of base stations established to provide mutual aid capabilities across the border.

8. Requests for aid across the border should first be made on the calling channel 821.0125/866.0125 MHz.

9. Regions that operate on these mutual aid channels shall designate agencies to monitor the calling channel on a 24 hour basis every day of the year.

10. The points of contact in adjoining regions across the border shall participate in the cooperative establishment of priorities in the case of multiple emergencies requiring use of the channels according to the following general priorities:

Priority A: Large scale disaster and emergency situations involving imminent danger to the safety of the public at large (e.g., earthquakes, large chemical spills).

Priority B: Other emergency situations involving imminent danger to the safety of life or property.

-3-

Priority C: Special event control activities, generally of a pre-planned nature, and requiring coordination of two or more agencies.

Priority D: Drill, test, and exercises of civil defense or disaster response procedures.

Whenever the use of a higher priority is required, all lower priority operations must cease in any area where interference to the use of a higher priority could occur.

1-10-91 WED 14:40 T

MEMORANDUM OF UNDERSTANDING BETWEEN THE
FEDERAL COMMUNICATIONS COMMISSION OF THE UNITED STATES
OF AMERICA AND THE SECRETARIA DE COMUNICACIONES Y
TRANSPORTES OF THE UNITED MEXICAN STATES
CONCERNING PRIVATE LAND MOBILE SERVICE USE
OF THE BANDS 821-824 MHZ AND 866-869 MHZ
ALONG THE COMMON BORDER

Pursuant to paragraphs 2.d and 2.e of Section B of the Agreement
Between the Government of the United States of America and the Government
of the United Mexican States Concerning Land Mobile Service in the Bands
470-512 MHz and 806-890 MHz Along Their Common Border of June 18, 1982
(the 1982 Agreement), the Federal Communications Commission of the United
States of America and the Secretaria de Comunicaciones y Transportes of
the United Mexican States have adopted this Memorandum of Understanding
on the conditions of use of the bands 821-824 MHz and 866-869 MHz to
provide additional spectrum for private land mobile radio stations.